Biological Robustness in Complex Environments (BRICS)

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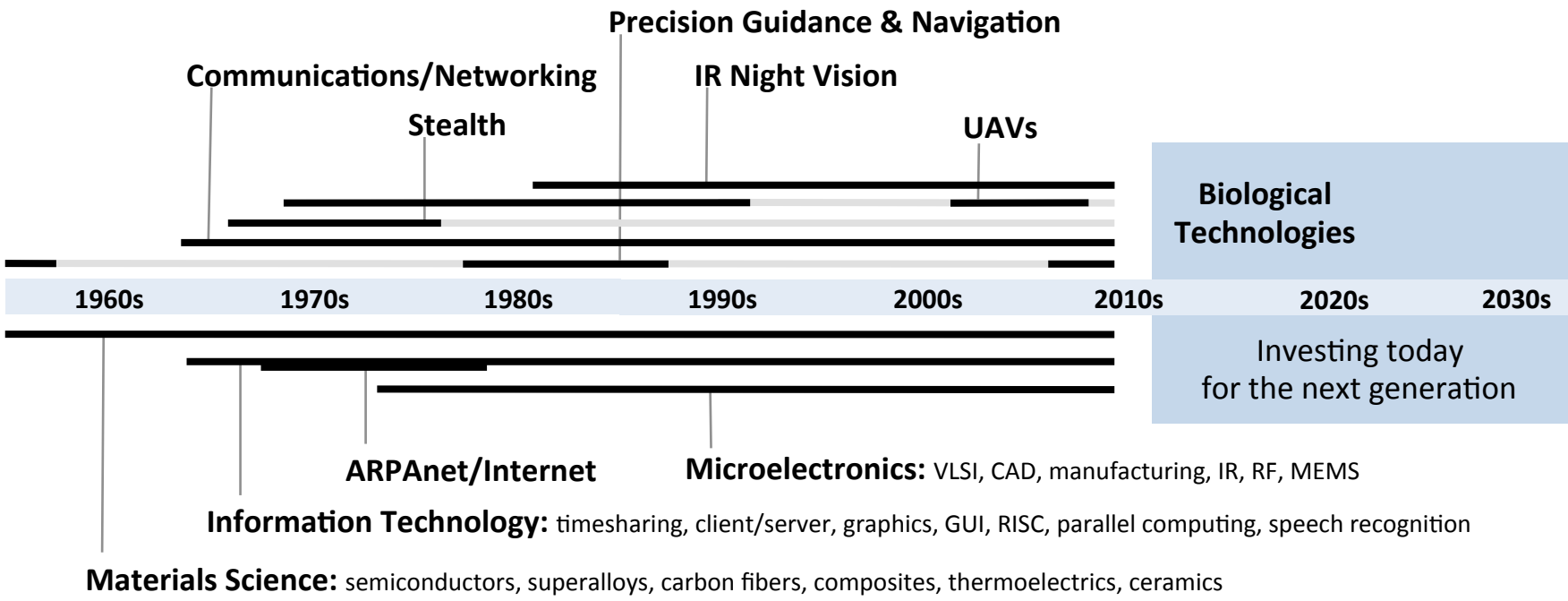
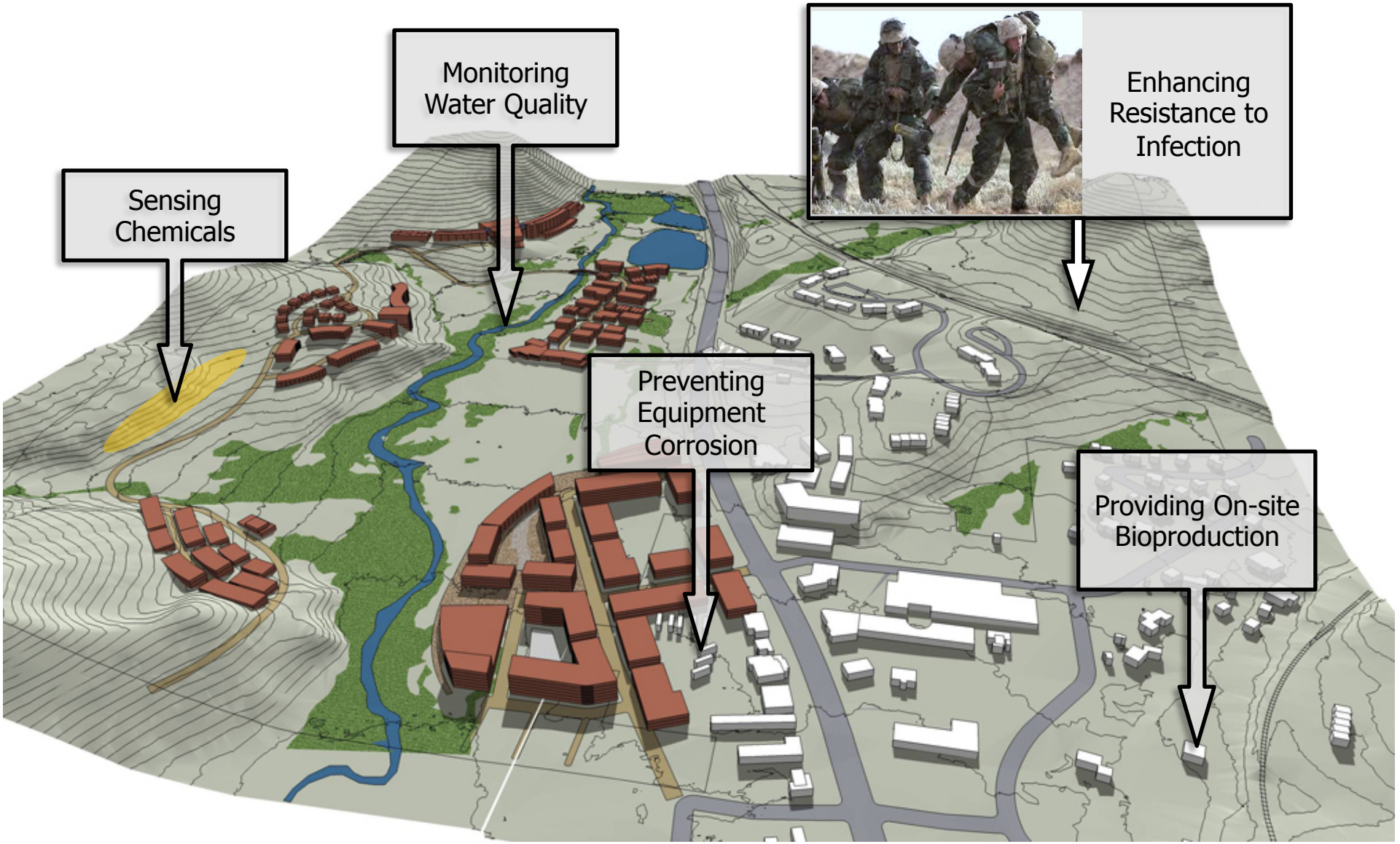
Mission:
Breakthrough Technologies for National Security



These new capabilities require a healthy ecosystem across Service S&T, universities, and industry

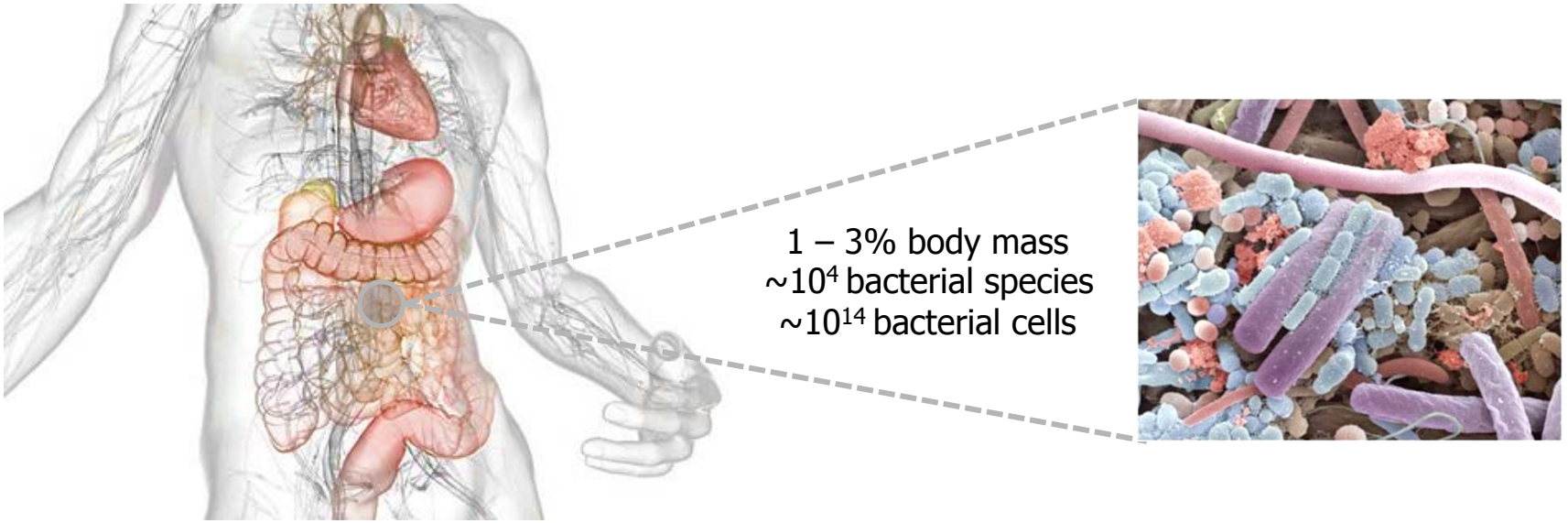
DARPA's role: pivotal early investments that change what's possible

BRICS Will Develop Enabling Technologies



The Promise of Robust Engineered Biosystems

Engineered Communities that Maintain or Repair Normal Microbiota Functions



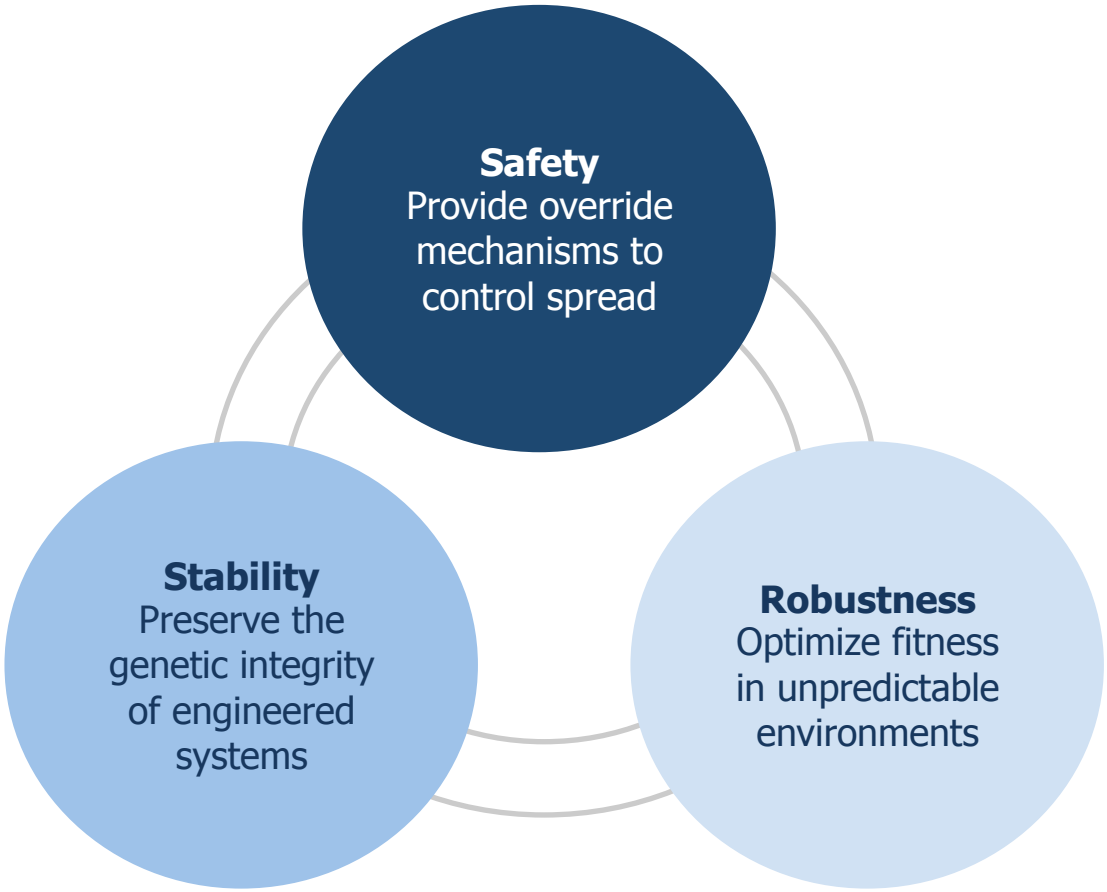
DoD Significance:

- 77% of warfighters in Iraq and 54% in Afghanistan had at least one bout with gastrointestinal disease because American gut microbiota are maladapted to new environments (Riddle *et al.* Am. J. Public Health 2008)
- 20% warfighters missed duty due to gastrointestinal disease during Operation Desert Shield (Hyams *et al.* NEJM 1991)
- Prophylactic engineered biosystems could be deployed stateside to increase readiness in theater

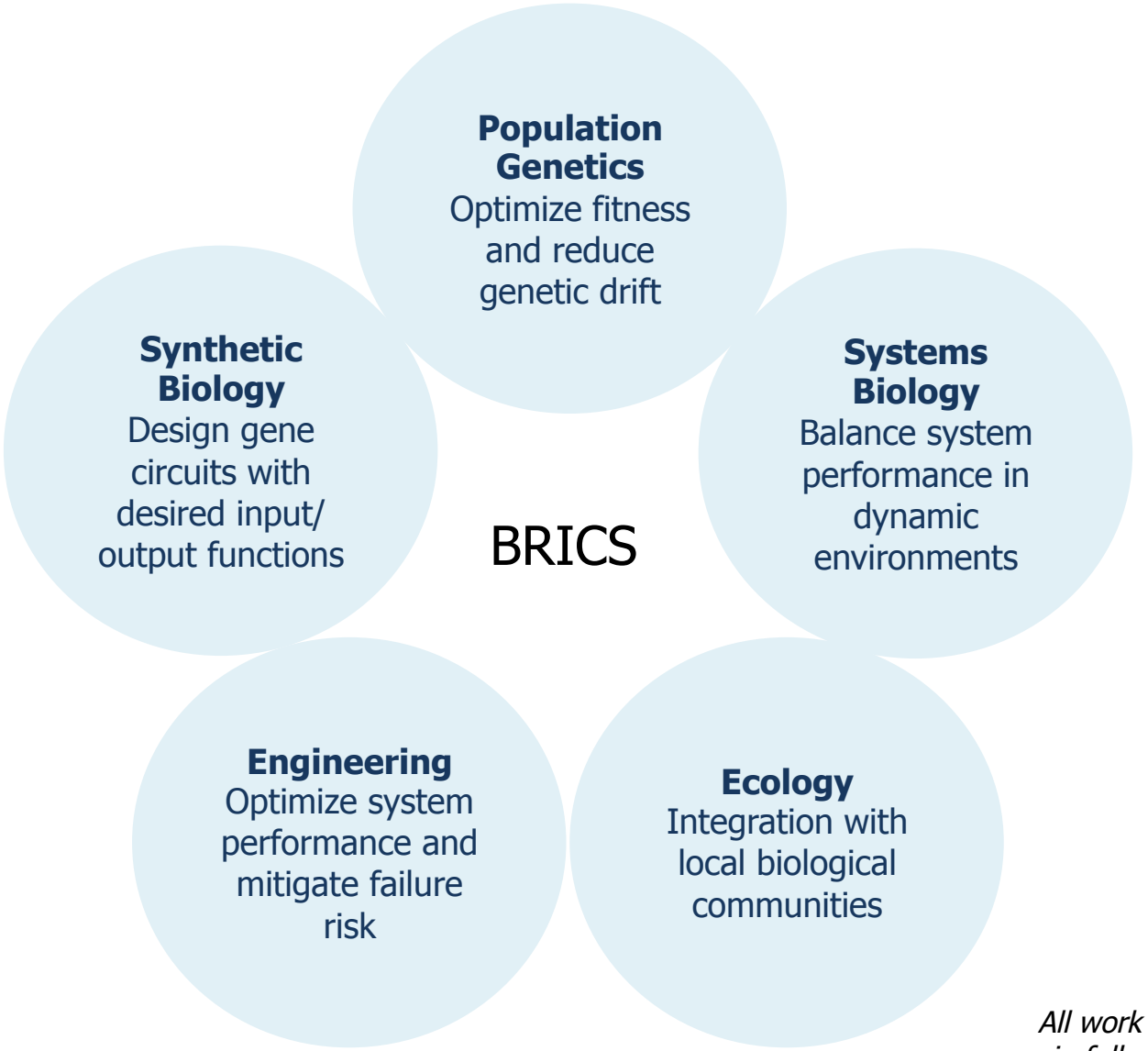
Impact of Robust Engineered Biosystems for Industry

BRICS Technology Could Lead to Reduced Costs for Industry by Sustaining Production and Minimizing Risks of Contamination

Technical Areas

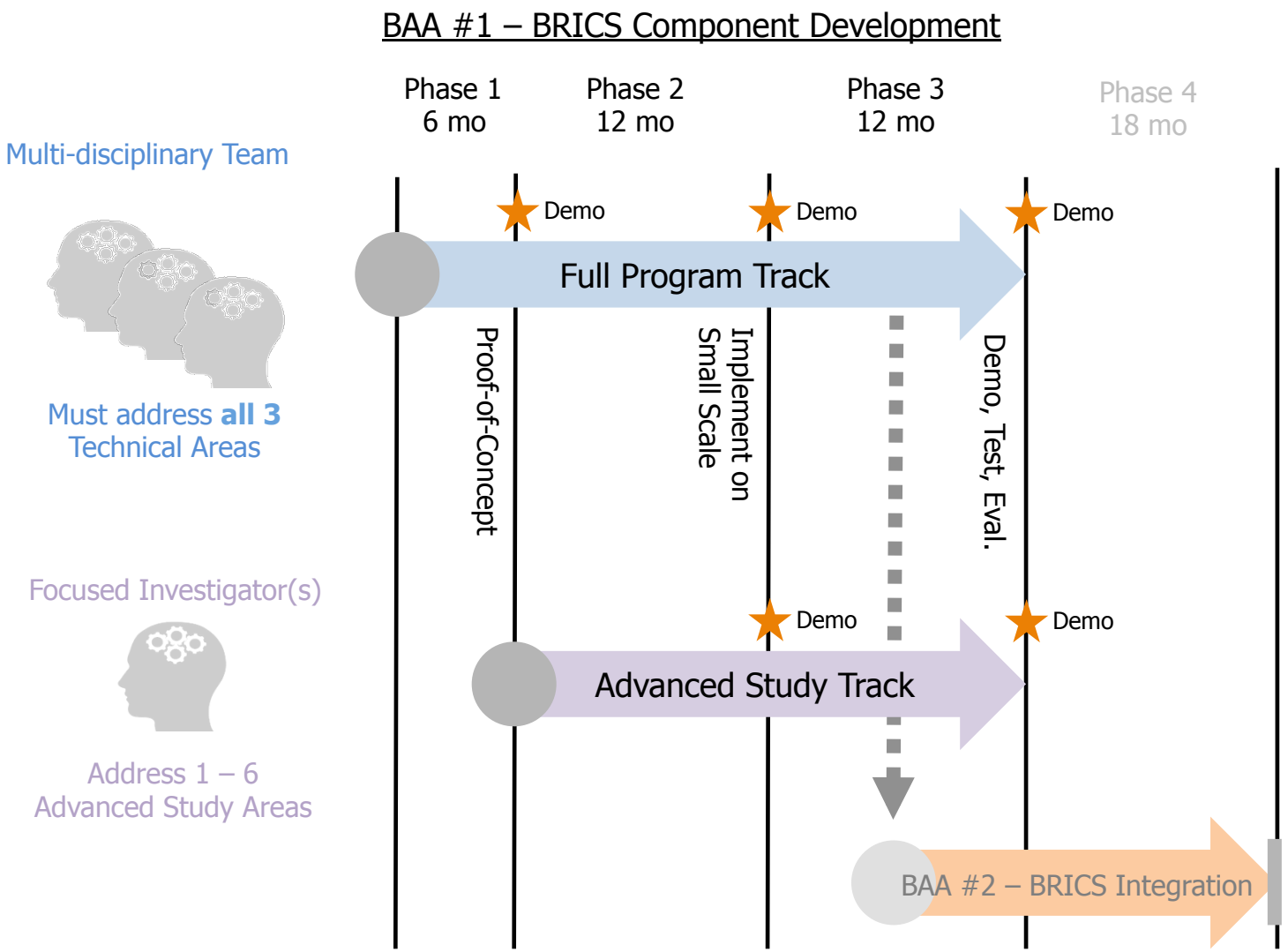


BRICS Aims to Build a New Scientific Community



All work must be conducted in fully contained systems.

BRICS Program Organization And Notional Schedule



Anticipated Proposer Schedule